FACT SHEET FOR NPDES PERMIT WA0038598
FACILITY NAME FLEISCHMAN'S VINEGAR COMPANY INC.

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES permits), which is administered by the Environmental Protection Agency (EPA). The EPA has authorized the State of Washington to administer the NPDES permit program. Chapter 90.48 RCW defines the Department of Ecology's authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits (Chapter 173-220 WAC), water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Applicant	Fleischman’s Vinegar Company Inc.
Facility Name and Address	111 Zehnder Street Sumner, WA 98390
Type of Facility:	Manufacturer of Vinegar
SIC Code	2099
Discharge Location	Waterbody Name: White River, Outfall 002 Latitude: 47° 12' 35" N Longitude: 122° 14' 27" W City of Sumner Sewer, Outfall 001 Latitude: 47° 12' 33" N Longitude: 122° 14' 34" W
Water Body ID Number	WA-10-1030

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

This facility was formerly a yeast production plant. It now manufactures vinegar as well as bottling and shipping vinegar produced somewhere else.

HISTORY

The facility received the last NPDES permit on August 12, 1998. The permit was a combined NPDES and State Waste Discharge Permit. It authorized the discharge of non-contact cooling water to the White River and treated process wastewater discharge to the City of Sumner sanitary sewer.

An agreement between the permittee and the City of Sumner was reached in December 1996 that called for an allowable flow to 12,000 gallons per day (GPD). The BOD and TSS loading were set at 142 lbs/day and 450 lbs/day, respectively while, the allowable concentration of BOD and TSS were set at 1418 mg/L and 4500 mg/L, respectively.

INDUSTRIAL PROCESS

White Vinegar is produced by the acetous fermentation of ethyl alcohol. A dilute alcohol (ethyl alcohol) solution is prepared with various nutrients and converted to acetic acid by the action of acetobacter bacteria in a submerged or trickle fermentation process. The process begins with mixing alcohol and water (obtained from onsite wells) in a mixing tank (see Figure 1). This is discharged to a fermentation tank. The vinegar foam from this tank is-routed to the filtration process for product recovery. The product is filtered and stored for shipment. Wastewater from filter wash water, and storage tank wash water is discharged to the sanitary sewer. Well water is also used to cool compressors and to control temperature during the production of vinegar. This non-contact cooling water is discharged to the White River. No chlorine is added to the cooling water. The facility also purchases apple cider vinegar as a finished product. This is then resold.

DISCHARGE OUTFALL

Outfall 001 consists of the discharge of wastewater to the City of Sumner sanitary sewer. This discharge consists of vinegar foam (maximum 120 GPD), filtration wash water (maximum 2500 GPD), and tank wash water (maximum 10,000 GPD). The combined discharge is stored in a tank, tested by the City of Sumner personnel and if the quality meets the agreed standards, it is batch discharged to the sanitary sewer. Outfall 002 consists of discharge of non-contact cooling water to the White River.

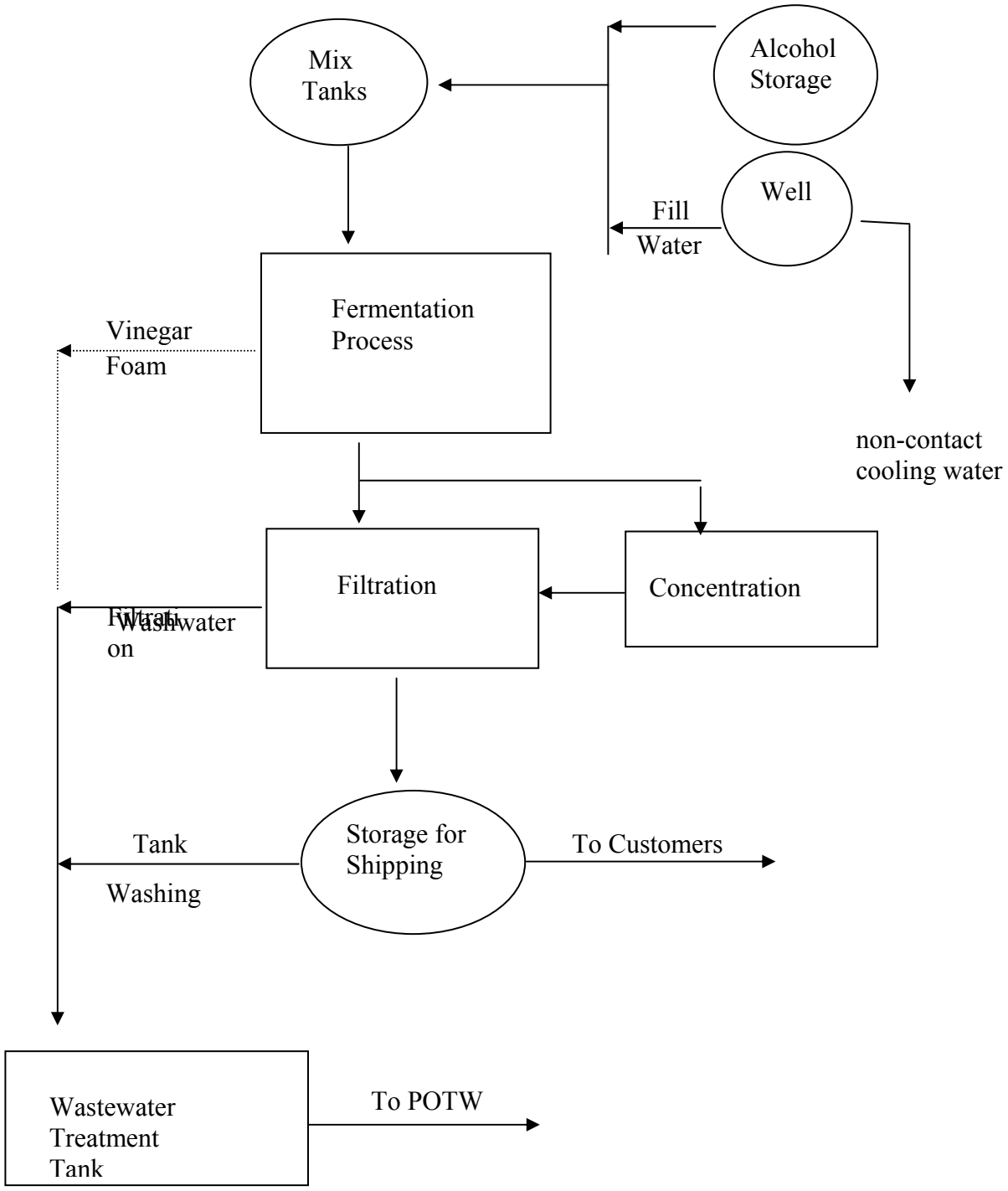

Figure 1: Industrial process in the manufacture of vinegar

PERMIT STATUS

The previous permit for this facility was issued on August 12, 1999. The previous permit placed effluent limitations on pH for Outfall 001 (City of Sumner sewer). Outfall 002 had limits for flow, ammonia, pH and temperature. An application for permit renewal was submitted to the Department on February 21, 2003 and accepted by the Department on March 1, 2004.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on July 23, 2002.

During the history of the previous permit, the Permittee has remained in compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

WASTEWATER CHARACTERIZATION

The proposed wastewater discharge is characterized for the following regulated parameters:

Table 1: Wastewater Characterization, Outfall 001

Parameter	Measure
pH, S.U.	6 to 9

Table 2: Wastewater Characterization, Outfall 002

Parameter	Measure
pH S.U.	6 to 9
Flow, MGD	0.58
Ammonia, Concentration. mg/L	From Non-Detect to 0.29
Ammonia, Mass, lbs/day	Maximum 1.44
Temperature, ºF	From 54 to 74

PROPOSED PERMIT LIMITATIONS

Federal and State regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

The limits in this permit are based in part on information received in the application. The effluent constituents in the application and DMRs were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the State of Washington were determined and included in this permit. Ecology does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent**.** Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, and do not have a reasonable

potential to cause a water quality violation**.** Effluent limits are not always developed for pollutants that may be in the discharge but not reported as present in the application. In those circumstances the permit does not authorize discharge of the non-reported pollutants. Effluent discharge conditions may change from the conditions reported in the permit application. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department of Ecology. The Permittee may be in violation of the permit until the permit is modified to reflect additional discharge of pollutants.

DESIGN CRITERIA

In accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria. There are no design criteria for the treatment facilities at this location.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

FLOW, OUTFALL 001

Waste water discharged to the City of Sumner sewer is limited for several parameters based on an agreement between the City of Sumner and Fleishman's Vinegar. In this agreement, it was agreed that flow should be limited to a flow of 12,000 GPD.

pH, OUTFALL 001

Waste water discharged to the City of Sumner sewer is limited for several parameters based on an agreement between the City of Sumner and Fleishman's Vinegar. In this agreement, it was agreed that pH would fall between 6 and 9 s.u.

BOD_5, OUTFALL 001

Waste water discharged to the City of Sumner sewer is limited for several parameters based on an agreement between the City of Sumner and Fleishman's Vinegar. In this agreement, it was agreed that BOD_5 should be limited to a concentration of 1418 mg/L and a mass of 142 lbs/day.

TSS, OUTFALL 001

Waste water discharged to the City of Sumner sewer is limited for several parameters based on an agreement between the City of Sumner and Fleishman's Vinegar. In this agreement, it was agreed that TSS should be limited to a concentration of 4500 mg/L and a mass of 450 lbs per day.

FLOW, OUTFALL 002

The reported flow from Fleischman's Vinegar for the period January 1, 2002 TO January 1, 2004 is 0.580 MGD. This is acceptable to Ecology for a limit.

TEMPERATURE, OUTFALL 002

Temperature limits will remain the same until the available cooling tower is installed under the Schedule of Compliance. Cooling towers are considered to be "all known, available and reasonable treatment" for temperature. One year after this installation, performance based limits will be computed using the method shown on page IV-18 of the WATER QUALITY PROGRAM PERMIT WRITERS MANUAL, Washington Department of Ecology Publication 92-109, Revised 2002.

AMMONIA, OUTFALL 002

There are no categorical limits for this effluent. Ammonia limits are taken from actual performance using a statistical method suggested by the EPA and adapted by Ecology. The use of this method drops the

maximum day ammonia mass limit from 21.3 lbs/day to 3.9 lbs/day. See Appendix C for these calculations.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington State (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the State of Washington.

ANTIDEGRADATION

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall be protected. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and is unable to determine if ambient water quality is either higher or lower than the designated classification criteria given in Chapter 173-201A WAC; therefore, the Department will use the designated classification criteria for this water body in the proposed permit. The discharges authorized by this proposed permit should not cause a loss of beneficial uses.

CRITICAL CONDITIONS

Surface water quality-based limits are derived for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

MIXING ZONES

The Water Quality Standards allow the Department of Ecology to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria.

DESCRIPTION OF THE RECEIVING WATER

The facility discharges to the White River which is designated as a Class A receiving water in the vicinity of the outfall. Characteristic uses include the following:

water supply (domestic, industrial, agricultural); stock watering; fish migration; fish and shellfish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Criteria for this discharge are summarized below:

Fecal Coliforms	100 organisms/100 mL maximum geometric mean
Dissolved Oxygen	8 mg/L minimum
Temperature	18 degrees Celsius maximum or incremental increases above background
pH	6.5 to 8.5 standard units
Turbidity	less than 5 NTU above background
Toxics	No toxics in toxic amounts (see Appendix C for numeric criteria for toxics of concern for this discharge)

CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART. A mixing zone was authorized in the extant permit. This mixing zone accompanied the total maximum daily load study prepared by Ecology in 1994 (Pelletier, 1994). In 1994, Fleischman's made a totally different product from the vinegar currently produced (yeast). As might be expected, the proposed permit should examine the waste stream as it currently exists, not as it was in 1994. Limits should not be based on an obsolete model. As

discussed above, new limits have been and will be derived based on actual performance. Each limit and its effect will be discussed below.

Ammonia

Pelletier established acute and chronic limits for ammonia in conjunction with the total maximum daily load study quoted above. These were 4.5 mg/L acute toxicity and 0.87 mg/L chronic toxicity. Using the ammonia limit in the proposed permit (3.9 pounds per day) and the established flow for Fleischman's yeast (580,000 gallons per day) the concentration of ammonia in the waste stream is 0.81 mg/L, below chronic concern. Since the largest concentration of ammonia actually measured from January 1, 2002 until January 1, 2004 was only 0.29 mg/L, it is obvious that the chronic ammonia limit has actually been met at the end of pipe for some time. No mixing zone is required for ammonia.

Temperature

Temperature limits in the extant permit were set using the maximum possible mixing zone. Since, by regulation, mixing zones must be minimized, the temperature limit here is maintained until a record of performance is established for the new cooling tower. See technology based limits above.

WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing.

Toxicity caused by unidentified pollutants is not expected in the effluent from this discharge as determined by the screening criteria given in Chapter 173-205 WAC. Therefore, no whole effluent toxicity testing is required in this permit. The Department may require effluent toxicity testing in the future if it receives information that toxicity may be present in this effluent.

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect beneficial uses of ground water. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

This Permittee has no discharge to ground and therefore no limitations are required based on potential effects to ground water.

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED August 12, 1999.

Comparison Outfall 001

Existing Limits	Proposed Limits	Source of Proposed Limit
None	Flow, 12,000 GPD	Agreement with City
pH, 6 to 9 S.U.	pH, 6 to 9 S.U.	Agreement with City
None	BOD_5, 1418 mg/L	Agreement with City
None	BOD_5, 142 lbs/day	Agreement with City
None	TSS, 4500 mg/L	Agreement with City
None	TSS 450 lbs/day	Agreement with City

Comparison Outfall 001

Existing Limits	Proposed Limits	Source of Proposed Limit
Flow, 0.85 MGD	Flow, 0.58 MGD	Performance based limit
Ammonia, 21.3 lbs/day	Ammonia, 3.9 lbs/day	Performance based limit
Ammonia, 0.81 mg/L	Ammonia, 0.81 mg/L	Performance based limit
pH, S.U., 6 to 9	pH, S.U., 6 to 9	Water quality standards
Temperature, 86ºF	Temperature, 86ºF until one year after cooling tower installation.	Existing permit initially and performance based limits afterward.

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

LAB ACCREDITATION

With the exception of certain parameters the permit requires all monitoring data to be prepared by a laboratory registered or accredited under the provisions of Chapter 173-50 WAC, *Accreditation of Environmental Laboratories.*

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

NON-ROUTINE AND UNANTICIPATED DISCHARGES

Occasionally, this facility may generate wastewater which is not characterized in their permit application because it is not a routine discharge and was not anticipated at the time of application. These typically are waters used to pressure test storage tanks or fire water systems or leaks from drinking water systems. These are typically clean waste waters but may be contaminated with pollutants. The permit contains an authorization for non-routine and unanticipated discharges. The permit requires a characterization of these waste waters for pollutants and examination of the opportunities for reuse. Depending on the nature and extent of pollutants in this wastewater and opportunities for reuse, Ecology may authorize a direct discharge via the process wastewater outfall or through a stormwater outfall for clean water, require the wastewater to be placed through the facilities wastewater treatment process or require the water to be reused.

SPILL PLAN

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. The Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the State of Washington. The Department proposes that this proposed permit be issued for 5 years.

REFERENCES FOR TEXT AND APPENDICES

Environmental Protection Agency (EPA)

1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.

1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.

1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.

1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.

1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C.

Tsivoglou, E.C., and J.R. Wallace.

1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

1994. Permit Writer's Manual. Publication Number 92-109

Washington State Department of Ecology.

Laws and Regulations(http://www.ecy.wa.gov/laws-rules/index.html)

Permit and Wastewater Related Information
(http://www.ecy.wa.gov/programs/wq/wastewater/index.html

Wright, R.M., and A.J. McDonnell.

1979. In-stream Deoxygenation Rate Prediction. Journal Environmental Engineering Division, ASCE. 105(EE2). (Cited in EPA 1985 op.cit.)

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on July 13, 2003 and July 20, 2003 in the *Tacoma News Tribune* to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on January 22, 2004 in the *Puyallup Herald* to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Industrial Unit Permit Coordinator
Department of Ecology
Southwest Regional Office – Water Quality
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6285, or by writing to the address listed above.

This permit and fact sheet were written by Gary Anderson, P.E.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

AKART-- An acronym for "all known, available, and reasonable methods of treatment".

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation --The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Major Facility--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

Minor Facility--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Responsible Corporate Officer-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate a discharger's ability to meet Washington State water quality standards can be found on the Department's homepage at http://www.ecy.wa.gov.

FLEISCHMANN'S VINEGAR
AMMONIA LIMIT

PERFORMANCE-BASED EFFLUENT LIMITS

USE EXCEL TO PERFORM THE LOGNORMAL TRANSFORMATION
AND CALCULATE THE TRANSFORMED MEAN AND VARIANCE

LOGNORMAL TRANSFORMED MEAN =	-0.1995
'LOGNORMAL TRANSFORMED VARIANCE =	0.4573
NUMBER OF SAMPLES/MONTH FOR COMPLIANCE MONITORING =	1
AUTOCORRELATION FACTOR(ne)(USE 0 IF UNKNOWN) =	0
E(X) =	1.0296
V(X) =	0.615
VARn	0.4573
MEANn=	-0.1995
VAR(Xn)=	0.615
MAXIMUM DAILY EFFLUENT LIMIT =	3.949
AVERAGE MONTHLY EFFLUENT LIMIT =	2.492

2.491573	2.319211

APPENDIX C (Cont.)
FleischmanN's Vinegar
Ammonia Performance

Time	Conc. Mg/L	Flow, mgd	Mass, lbs	LN Mass
1-Jan	0.1	0.58	0.495494	-0.702200
2/1/2002	0.1	0.58	0.495494	-0.702200
3/1/2002	0.1	0.58	0.494494	-0.704220
4/1/2002	0.1	0.58	0.495494	-0.702200
3/1/2002	0.1	0.58	0.495494	-0.702200
4/1/2002	0.16	0.58	0.792790	-0.232196
5/1/2002	0.11	0.58	0.545043	-0.606889
6/1/2002	0.1	0.58	0.495494	-0.702200
7/1/2002	0.12	0.58	0.594592	-0.519878
8/1/2002	0.13	0.58	0.6435	-0.440833
9/1/2002	0.13	0.58	O.6435	-0.44083
10/1/2002	0.4	0.58	1.98	0.683096
11/1/2002	0.3	0.58	1.485	0.395414
12/1/2002	0.29	0.58	1.4355	0.361513
1/1/2003	0.2	0.58	0.99	-0.010050
2/1/2003	0.2	0.58	0.99	-0.010050
3/1/2003	0.2	0.58	0.99	-0.010050
4/1/2003	0.2	0.58	0.99	-0.010050
5/1/2003	0.1	0.58	0.495494	-0.702200
6/1/2003	0.3	0.58	1.485	0.395414
7/1/2003	0.3	0.58	1.485	0.395414
8/1/2003	0.3	0.58	1.485	0.395414
9/1/2003	0.225	0.58	1.11375	0.107732
10/1/2003	0.1	0.58	0.495494	-0.702200
11/1/2003	0.2	0.58	0.99	-0.010050
12/1/2003	0.2	0.58	0.99	-0.010050
MEAN				-0.199482
STDEV				0.457340

APPENDIX D--RESPONSE TO COMMENTS

Comment 1.

1. **Anti-degradation.** The White River is a class "A" water body. The anti-degradation policy in the State of Washington's Pollution Control Act WAC 173-201A-070 clearly states, "Existing beneficial uses shall be maintained and protected and no further degradation which would interfere with or become injurious to existing beneficial uses shall be allowed." Discharging pollutants known to be injurious to fish populations in amounts that exceed state water quality standards in an area which characterizes fish migration, rearing and spawning habitat among the 'beneficial uses" is in violation of this act and should not be allowed.

Response to Comment 1.

The anti-degradation policy accurately quoted here begs the question of what constitutes the baseline condition from which further degradation is not allowed. The current policy of Ecology is still under discussion, but if fundamentally assumes that the status quo at the time of policy adoption will be the baseline. In other words, new permits will have to show no significant deterioration of the extant water quality as compared to listed parameters. Fleischmann's Vinegar is not a new facility.

The current permit itself does not allow exceedance of state water quality standards, which in and of themselves are protective of fish life. This comment, while unexceptionable, is so broad as to give no clue as to what might specifically be done to alter the permit.

Comment 2.

2. **Ammonia.** Ground water used for the non-contact cooling water has been established as the source of ammonia in Fleishmann's discharge. Ammonia is highly toxic to aquatic life. Fleishmann's should be required to remove the ammonia from the groundwater before allowing it to be discharged into the river.

Response to Comment 2.

In response to this comment, the actual performance of Fleischmann's Vinegar in removing ammonia from its non-contact cooling water has been re-examined. An examination of the discharge monitoring reports submitted by the permittee show that for the period January 2002 to January 2004 ammonia discharge amounts were far below the ammonia discharges used in deriving the limits for the extant permit.

Ecology policy has a procedure for setting limits based on long term, typical performance. As shown in Appendix C, this method established new limits for ammonia at 3.9 pounds per day, maximum. At this rate, a mixing zone is not required to meet water quality standards.

Comment 3.

3. **Temperature.** WAC 173-201A mandates that, "Temperature of "class A" waters must not exceed 18 degrees Centigrade due to human activities. Fleishmann's discharges non-contact cooling water up to 30 degrees Centigrade. Fleishmann's should be required to cool the water prior to discharge into the river.

Response to Comment 3.

Fleischmann's Vinegar discharge non-contact cooling water directly to the environment without treatment. This cooling water temperature limit is based on dilution at the edge of the regulation mixing zone. The regulations require that all known, available and reasonable treatment be applied to all discharges before a mixing zone can be granted. In this case, all known, available and reasonable treatment would be a cooling tower. This permit will be required that a cooling tower be installed in the discharge pipe flowing to Outfall Number 002.

Comment 4.

4. **pH.** Although the stretch of the White River where the outfall discharges is not on the 303(d) list for pH, pH levels remain an issue of concern in the overall White/Puyallup River system. Fleishmann's should be required to meet pH standards at the end of the pipe.

Response to Comment 4.

The pH requirement of WAC 173-201A for Class A waters is 6.5 to 8.5 with a maximum human caused variation of plus or minus 0.5, resulting in the extant permit limit of 6 to 9. The discharge has remained within this range for the period January 1, 2001 to January 1, 2004. The commenter suggests no definite course of action, so none is taken.

Comment 5.

5. **Mixing Zone**. A mixing zone, which allows discharge of pollutants that exceed the state water quality standards into Commencement Bay, is not in the spirit of the Clean Water Act. The objective of this act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." The routine authorization of mixing zones if counterproductive to meeting this objective. It is clearly stated in section 1251 of the CWA that, "it is the national policy that the discharge of toxic pollutants in to navigable waters be eliminated by 1985". The Department of Ecology's failure to phase out these mixing zones or even to include sunset language, which will encourage movement towards the elimination of these zones does nothing to achieve the goals of the CWA and is in direct violation of the spirit of the act. This wholesale authorization of mixing zones violates water quality standards determined and implemented by the State of Washington. Fleischmann's Vinegar should be required to meet water quality standards.

Response to Comment 5.

See the response to comment 3. The Washington Department of Ecology did not establish the mixing zone law. The law establishing mixing zones was set by the Congress of the United States of America (by default) and the Legislature of the State of Washington. This specific permit will not defy the will of these bodies. However, no mixing will likely be granted after the cooling tower installation.